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(72) Inventors:  
• Takeshita, Hitoshi  
Minato-ku, Tokyo (JP)  
• Henmi, Naoya  
Minato-ku, Tokyo (JP)

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(74) Representative:  
VOSSIUS & PARTNER  
Siebertstrasse 4  
81675 München (DE)

(71) Applicant: NEC CORPORATION  
Tokyo (JP)

### (54) Optical transmission system

(57) In an optical transmission system comprising an optical branch unit, first through fourth OR/OS pairs each of which includes optical receiver and optical transmitter, optical switch devices for active and standby systems, each of the optical switch devices having an N number of input ports and an M number of output ports; and an optical multiplexer for multiplexing an M number of optical signals supplied from the third OR/OS pair and an M number of optical signals supplied from the fourth OR/OS pair to produce an M number of optical signals, the optical switch devices and the first through the fourth OR/OS pairs have a 3-dB margin with respect to the input optical strength.

First and second paths are each adjusted such that the time required for transmitting an optical signal is identical for all paths. The first path is from an output port of the optical branch unit to the point where the optical signals are multiplexed in the optical multiplexer via the first and the third OR/OS pairs, and the optical switch device for the active system. The second path is from an output port of the optical branch unit to the point where the optical signals are multiplexed in the optical multiplexer via the second and the fourth OR/OS pairs, and the optical switch device for the standby system.

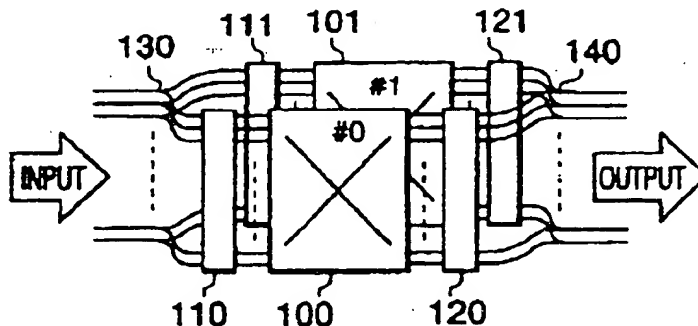


FIG.1

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## EUROPEAN SEARCH REPORT

Application Number  
EP 98 10 1612

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
A	DE 43 06 032 A (SIEMENS AG) 1 September 1994 (1994-09-01) * abstract; claims 1-6 *	1-6	H04Q11/00 H04B10/00
A	EP 0 503 849 A (AMERICAN TELEPHONE & TELEGRAPH) 16 September 1992 (1992-09-16) * abstract * * column 4, line 35-55 *	1-6	
			TECHNICAL FIELDS SEARCHED (Int.Cl.8)
			H04B H04Q
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 14 June 2000	Examiner Dhondt, E
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons &amp; : member of the same patent family, corresponding document</p>			

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE 4306032 A	01-09-1994	NONE	
EP 0503849 A	16-09-1992	US 5181134 A	19-01-1993
		JP 4326334 A	16-11-1992

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